

### AMENDMENTS TO THE CLAIMS

Please amend Claim 6 as indicated below.

Please add Claims 25-30 as indicated below.

1 (Withdrawn) A method of forming a rugged metal structure comprising the steps of:

forming a rugged structure comprised of substantially silicon atoms; and  
replacing silicon atoms in the rugged structure with metal atoms.

2. (Withdrawn) The method of Claim 1, wherein the step of forming a rugged structure comprises:

depositing an amorphous or polycrystalline silicon structure by chemical vapor deposition; and

annealing the silicon structure to form a silicon surface having a rugged surface morphology.

3. (Withdrawn) The method of Claim 1, wherein the step of replacing silicon atoms with metal atoms comprises exposing the rugged structure to a refractory metal-halide complex.

4. (Withdrawn) The method of Claim 3, wherein the refractory metal-halide complex comprises  $WF_6$ .

5. (Withdrawn) The method of Claim 4, further comprising the step of chemically oxidizing the rugged structure prior to exposing the rugged structure to the refractory metal-halide complex.

6. (Currently Amended) A process for fabricating a metal-insulator-metal capacitor on a semiconductor wafer comprising the steps of:

forming a silicon electrode structure on the semiconductor wafer;

making the silicon electrode structure rugged; and

after making the silicon electrode rugged, replacing the silicon in the rugged silicon electrode structure with a metal, thereby forming a rugged metal electrode.

7. (Previously Presented) The process of Claim 6, further comprising covering the rugged metal electrode with a dielectric layer having a high dielectric constant.

8. (Original) The process of Claim 7, further comprising covering the dielectric layer with a metal layer.

9. (Previously Presented) The process of Claim 6, wherein the step of replacing the silicon in the silicon electrode structure comprises forming a boundary layer on the silicon electrode structure, exposing the silicon electrode structure to a refractory metal-halide complex, and removing the boundary layer.

10. (Previously Presented) The process of Claim 9, wherein the boundary layer comprises a dielectric and the refractory metal-halide complex comprises  $WF_6$ .

11. (Original) The process of Claim 7, wherein the dielectric layer comprises a material selected from the group consisting of  $Ta_2O_5$ ,  $BaTiO_3$ ,  $SrTiO_3$ ,  $Ba_xSr_{1-x}TiO_3$ , and  $PbZr_xTi_{1-x}O_3$ .

12. (Original) The process of Claim 8, wherein the metal layer comprises titanium.

13.-24. (Cancelled)

25. (New) A method of forming an integrated circuit capacitor on a substrate, the method comprising:

forming a rugged silicon electrode structure on the substrate;

forming a metal electrode having a rugged surface on the substrate after forming the rugged silicon electrode by replacing silicon in the rugged silicon electrode structure with metal;

covering said rugged surface with a dielectric; and

covering said dielectric with a second electrode.

26. (New) The method of Claim 25, wherein forming the metal electrode comprises providing a hemispherical grain silicon morphology.

27. (New) The method of Claim 25, wherein forming the metal electrode comprises forming a rugged silicon layer and converting the silicon layer to metal.

28. (New) The method of Claim 1, wherein the rugged structure of substantially silicon atoms comprises a hemispherically grained silicon structure.

29. (New) The process of Claim 6, wherein making the silicon electrode structure rugged comprises seeding and annealing to form a hemispherically grained silicon layer.

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30. (New) The process of Claim 6, wherein the rugged silicon electrode structure comprises a hemispherical grain morphology.